

line 26, change "sixth" to --fifth--.

Page 63, line 5, after "height" insert --111--.

Page 67, line 18, after "height" insert --111--.

Page 68, line 7, after "material" insert --114--.

Page 69, line 13, after "applied" insert --to--;  
line 27, after "material" insert --114--.

IN THE CLAIMS:

Please amend claims 1-39 and 44-46 as follows:

1. (Amended) A matrix type display device comprising:

a display substrate;

an optical material selectively arranged at predetermined positions on [a] the display substrate, the optical material being liquid at least during coating at the predetermined positions; and

[wherein a difference in height is formed in the boundary between each of the predetermined positions and the periphery thereof, for selectively coating the optical material]

surface features formed on the display substrate that cause the optical material to remain at the predetermined positions.

2. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming [a difference in height at the boundary between] surface features at each of the predetermined positions on the display substrate [and the peripheries thereof, for coating the liquid optical material]; and

coating the liquid optical material at the predetermined positions, [by using the difference in height] the surface features causing the liquid optical material to remain at the predetermined positions.

3. (Amended) The method of manufacturing a matrix type display device according to Claim 2, wherein: [the difference in height is formed in]

each surface feature defines a concave shape in which a surface at each of the predetermined positions is lower than [the] a periphery [thereof so that] of the predetermined positions; and

the liquid optical material is coated at the predetermined positions with [the surface] a side of the display substrate [coated with the liquid optical material turned] having the surface features facing upward.

4. (Amended) The method of manufacturing a matrix type display device according to Claim 2, wherein: [the difference in height is formed in]

each surface feature defines a convex shape in which a surface at each of the predetermined positions is higher than [the] a periphery [thereof so that] of the predetermined positions; and

the liquid optical material is coated at the predetermined positions with [the surface] a side of the display substrate [coated with the liquid optical material turned] having the surface features facing downward.

5. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a plurality of first bus lines on the display substrate;

forming [a difference in height in the boundary between] surface features at each of the predetermined positions on the display substrate [and the periphery thereof, for coating the liquid optical material];

coating the liquid optical material at the predetermined positions, [by using the difference in height] the surface features causing the liquid optical material to remain at the predetermined positions; and

forming a plurality of second bus lines [crossing] transverse to the first bus lines [to cover] over the optical material.

6. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display

substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a plurality of first bus lines on the display substrate;

forming [a difference in height in the boundary between] surface features at each of the predetermined positions on the display substrate [and the periphery thereof, for coating the liquid optical material];

coating the liquid optical material at the predetermined positions, [by using the difference in height] the surface features causing the liquid optical material to remain at the predetermined positions;

forming a plurality of second bus lines on a peeling substrate through a peeling layer; and

transferring [the] a structure, including the second bus lines, peeled off from the peeling layer on the peeling substrate onto the display substrate coated with the optical material so that the first bus lines cross the second bus lines.

7. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming, on the display substrate, wiring including a plurality of scanning lines and signal lines, pixel electrodes respectively corresponding to the predetermined positions, and switching elements for controlling [the] states of the pixel electrodes in accordance with [the] a state of the wiring;

forming [a difference in height in the boundary between] surface features at each of the predetermined positions on the display substrate [and the periphery thereof, for coating the liquid optical material]; and

coating the liquid optical material at the predetermined positions, [by using the difference in height] the surface features causing the liquid optical material to remain at the predetermined positions.

8. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming [a difference in height in the boundary between] surface features at each of the predetermined positions on the display substrate [and the periphery thereof, for coating the liquid optical material];

coating the liquid optical material at the predetermined positions, [by using the difference in height] the surface features causing the liquid optical material to remain at the predetermined positions;

forming wiring, including a plurality of scanning lines and signal lines, pixel electrodes respectively corresponding to the predetermined positions, and switching elements for controlling [the] states of the pixel electrodes in accordance with [the] a state of the wiring, on a peeling substrate through a peeling layer; and

transferring [the] a structure peeled off from the peeling layer on the peeling substrate onto the display substrate.

9. (Twice Amended) The method of manufacturing a matrix type display device according to Claim 5, wherein:

the [difference in height is formed in] surface features comprise the first bus lines and define a concave shape [by using the first bus lines,] in which a surface at each of the predetermined positions is lower than [the] a periphery thereof; and

in the step of coating the liquid optical material, the liquid optical material is coated at the predetermined positions with [the surface] a side of the display substrate to be coated with the liquid optical material [turned] facing upward.

10. (Amended) The method of manufacturing a matrix type display device according to Claim 7, wherein:

the [difference in height is formed in] surface features comprise the wiring and define a concave shape [by using the wiring,] in which a surface at each of the predetermined positions is lower than [the] a periphery thereof; and

in the step of coating the liquid optical material, the liquid optical material is coated at the predetermined positions with [the surface] a side of the display substrate to be coated with the liquid optical material [turned] facing upward.

11. (Amended) The method of manufacturing a matrix type display device according to Claim 7, wherein:

the [difference in height is formed in] surface features comprise the pixel electrodes and define a convex shape [by using the pixel electrodes,] in which a surface of each of the predetermined positions is higher than [the] a periphery thereof; and

in the step of coating the liquid optical material, the liquid optical material is coated at the predetermined position with [the surface] a side of the display substrate to be coated with the liquid optical material [turned] facing downward.

12. (Twice Amended) The method of manufacturing a matrix type display device according to Claim 5, further comprising the step of forming an interlayer insulation film;

wherein the [difference in height is formed in] surface features comprise the insulation film and define a concave shape [by using the interlayer insulation film,] in which a surface at each of the predetermined positions is lower than [the] a periphery thereof; and

in the step of coating the liquid optical material, the liquid optical material is coated at the predetermined positions with [the surface] a side of the display substrate to be coated with the liquid optical material [turned] facing upward.

13. (Twice Amended) The method of manufacturing a matrix type display device according to Claim 5, further comprising the step of forming a light shielding layer;

wherein the [difference in height is formed in] surface features comprise the light shielding layer and define a concave shape [by using the light shielding layer,] in which a surface at each of the predetermined positions is lower than [the] a periphery thereof; and

in the step of coating the liquid optical material, the liquid optical material is coated at the predetermined positions with [the surface] a side of the display substrate to be coated with the liquid optical material [turned] facing upward.

14. (Twice Amended) The method of manufacturing a matrix type display device according to claim 2, wherein in the step of forming [the difference in height] surface

features, the [difference in height is] surface features are formed by coating a liquid material and then selectively removing the coated liquid material.

15. (Twice Amended) The method of manufacturing a matrix type display device according to claim 2, wherein the [difference in height is] surface features are formed on [the] a peeling substrate through [the] a peeling layer in the step of forming [the difference in height] surface features, and then [the] a structure peeled off from the peeling layer on the peeling substrate is transferred onto the display substrate.

16. (Twice Amended) The method of manufacturing a matrix type display device according to claim 2, wherein [the] a height  $d_r$  of the [difference in height] surface features satisfies the following equation (1):

$$d_a < d_r \quad (1)$$

$d_a$ [:] is a thickness of a single coat of the liquid optical material.

17. (Amended) The method of manufacturing a matrix type display device according to Claim 16, wherein the following equation (2) is satisfied:

$$V_d/(d_b \cdot r) > E_t \quad (2)$$

wherein:

$V_d$ [:] is a driving voltage applied to the optical material;

$d_b$ [:] is a total thickness of the liquid optical material coated;

$r$ [:] is a concentration of the liquid optical material; and

$E_t$ [:] is a minimum electric field strength (threshold electric field strength) at which a change in optical properties of the liquid optical material occurs.

18. (Twice Amended) The method of manufacturing a matrix type display device according to claim 2, wherein the following equation (3) is satisfied:

$$d_r = d_r \quad (3)$$

wherein:

$d_r$ [:] is a thickness of the optical material at the time of completion; and

$d_r$  is a height of the surface features.

19. (Amended) The method of manufacturing a matrix type display device according to Claim 18, wherein the following equation (4) is satisfied:

$$V_d/d_f > E_t \quad (4)$$

wherein:

$V_d[:]$  is a driving voltage applied to the optical material; and

$E_t[:]$  is a minimum electric field strength (threshold electric field strength) at which a change in optical properties of the liquid optical material occurs.

20. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

enhancing [the] a lyophilicity at the predetermined positions on the display substrate relative to [the] a lyophilicity [of the] at peripheries [thereof] of the predetermined positions; and

coating the liquid optical material at the predetermined positions.

21. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a plurality of first bus lines on the display substrate;

enhancing [the] a lyophilicity at the predetermined positions on the display substrate relative to [the] a lyophilicity [of the] at peripheries [thereof] of the predetermined positions;

coating the liquid optical material at the predetermined positions; and

forming a plurality of second bus lines [crossing] transverse to the first bus lines [to cover] over the optical material.

22. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a plurality of first bus lines on the display substrate;  
 enhancing [the] a lyophilicity at the predetermined positions on the display substrate relative to [the] a lyophilicity [of the] at peripheries [thereof] of the predetermined positions;  
 coating the liquid optical material at the predetermined positions;  
 forming a plurality of second bus lines on a peeling substrate through a peeling layer; and  
 transferring [the] a structure peeled off from the peeling layer on the peeling substrate onto the display substrate coated with the optical material so that the first bus lines cross the second bus lines.

23. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming, on the display substrate, wiring including a plurality of scanning lines and signal lines, pixel electrodes respectively corresponding to the predetermined positions, and switching elements for controlling [the] states of the pixel electrodes in accordance with [the] a state of the wiring;

enhancing [the] a lyophilicity at the predetermined positions on the display substrate relative to [the] a lyophilicity [of the] at peripheries [thereof] of the predetermined positions; and

coating the liquid optical material at the predetermined positions.

24. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

enhancing [the] a lyophilicity at the predetermined positions on the display substrate relative to [the] a lyophilicity [of the] at peripheries [thereof] of the predetermined positions;



coating the liquid optical material at the predetermined positions;

forming wiring, including a plurality of scanning lines and signal lines, pixel electrodes respectively corresponding to the predetermined positions, and switching elements for controlling [the] states of the pixel electrodes in accordance with [the] a state of the wiring, on a peeling substrate through a peeling layer; and

transferring [the] a structure peeled off from the peeling layer on the peeling substrate onto the display substrate.

25. (Twice Amended) The method of manufacturing a matrix type display device according to Claim 21, wherein a distribution of high liquid repellency is formed along the first bus lines on the display substrate to enhance the lyophilicity at the predetermined positions on the display substrate relative to the lyophilicity [of] at the peripheries [thereof].

26. (Amended) The method of manufacturing a matrix type display device according to Claim 23, wherein a distribution of high liquid repellency is formed along the wiring on the display substrate to enhance the lyophilicity at the predetermined positions on the display substrate relative to the lyophilicity [of] at the peripheries [thereof].

27. (Amended) The method of manufacturing a matrix type display device according to Claim 23, wherein [the] a lyophilicity of [the] surfaces of the pixel electrodes on the display substrate is enhanced to enhance the lyophilicity at the predetermined positions on the display substrate relative to the lyophilicity [of] at the peripheries [thereof].

28. (Twice Amended) The method of manufacturing a matrix type display device according to claim 21, further comprising the step of forming an interlayer insulation film;

wherein a distribution of high liquid repellency is formed [along] on the interlayer insulation film on the display substrate to enhance the lyophilicity at the predetermined positions on the display substrate relative to the lyophilicity [of] at the peripheries [thereof].

29. (Amended) The method of manufacturing a matrix type display device according to Claim 23, further comprising the step of forming an interlayer insulation film so that [the] surfaces of the pixel electrodes are exposed;

wherein in the formation of the interlayer insulation film, a [difference in height] structural surface feature that influences the optical material coating is formed [in] at the boundary between [the] a portion where the surface of each of the pixel electrodes is exposed and [the] a periphery [thereof, for coating the liquid optical material] of the pixel electrode surface; and

[the] a liquid repellency of the surfaces of the pixel electrodes is enhanced to enhance the lyophilicity at the predetermined positions on the display substrate relative to the lyophilicity [of] at the peripheries [thereof] of the predetermined positions.

30. ✓ (Twice Amended) The method of manufacturing a matrix type display device according to claim 21, further comprising the step of forming a light shielding layer;

wherein a distribution of high liquid repellency is formed along the light shielding layer on the display substrate to enhance the lyophilicity at the predetermined positions on the display substrate relative to the lyophilicity [of] at the peripheries [thereof].

31. (Twice Amended) The method of manufacturing a matrix type display device according to claim 20, wherein ultraviolet irradiation or irradiation of plasma of O<sub>2</sub>, CF<sub>3</sub>, or Ar [or like is carried out to increase] increases a difference between the lyophilicity at the predetermined positions and the lyophilicity of the peripheries [thereof] of the predetermined positions.

32. (Twice Amended) The method of manufacturing a matrix type display device according to claim 2, further comprising the step of enhancing [the] a lyophilicity at the predetermined positions on the display substrate relative to [the] a lyophilicity of [the] peripheries [thereof] of the predetermined positions.

33. (Twice Amended) The method of manufacturing a matrix type display device according to Claim 20, further comprising the step of forming a [difference in height in] structural surface feature that influences the optical material coating at the boundary between each of the predetermined positions on the display substrate and the [periphery thereof, for coating the liquid optical material] peripheries.

34. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display

substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a potential distribution on the display substrate so that [the] a potential at each of the predetermined positions differs from [the] a potential at a periphery [thereof] of the predetermined positions; and

selectively coating the liquid optical material at the predetermined positions [by utilizing the potential distribution].

35. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a potential distribution on the display substrate so that [the] a potential at each of the predetermined positions differs from [the] a potential at a periphery [thereof] of the predetermined positions; and

coating the liquid optical material at the predetermined positions after charging the optical material to a potential at which a repulsive force is generated between the coated liquid optical material at each of the predetermined positions and the periphery [thereof].

36. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a plurality of first bus lines on the display substrate;

forming a potential distribution on the display substrate so that [the] a potential at each of the predetermined positions differs from [the] a potential at a periphery [thereof] of the predetermined positions;

coating the liquid optical material at the predetermined positions after charging the optical material to a potential at which a repulsive force is generated between the coated liquid optical material at each of the predetermined positions and the periphery [thereof]; and

forming a plurality of second bus lines [crossing] transverse to the first bus lines [to cover] over the optical material.

37. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a plurality of first bus lines on the display substrate;

forming a potential distribution on the display substrate so that [the] a potential at each of the predetermined positions differs from [the] a potential at a periphery [thereof] of the predetermined positions;

coating the liquid optical material at the predetermined positions after charging the optical material to a potential at which a repulsive force is generated between the coated liquid optical material at each of the predetermined positions and the periphery [thereof];

forming a plurality of second bus lines on a peeling substrate through a peeling layer; and

transferring [the] a structure peeled off from the peeling layer on the peeling substrate onto the display substrate coated with the optical material so that the first bus lines cross the second bus lines.

38. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming, on the display substrate, wiring including a plurality of scanning lines and signal lines, pixel electrodes respectively corresponding to the predetermined positions, and switching elements for controlling [the] states of the pixel electrodes in accordance with [the] a state of the wiring;

forming a potential distribution on the display substrate so that [the] a potential at each of the predetermined positions differs from [the] a potential at a periphery [thereof] of the predetermined positions; and

coating the liquid optical material at the predetermined positions after charging the optical material to a potential at which a repulsive force is generated between the coated liquid optical material at each of the predetermined positions and the periphery [thereof].

39. (Amended) A method of manufacturing a matrix type display device comprising an optical material selectively arranged at predetermined positions on a display substrate, the optical material being liquid at least during coating at the predetermined positions, the method comprising the steps of:

forming a potential distribution on the display substrate so that [the] a potential at each of the predetermined positions differs from [the] a potential at a periphery [thereof];

coating the liquid optical material at the predetermined positions after charging the optical material to a potential at which a repulsive force is generated between the coated liquid optical material at each of the predetermined positions and the periphery [thereof];

forming wiring, including a plurality of scanning lines and signal lines, pixel electrodes respectively corresponding to the predetermined positions, and switching elements for controlling [the] states of the pixel electrodes in accordance with [the] a state of the wiring, on a peeling substrate through a peeling layer; and

transferring [the] a structure peeled off from the peeling layer on the peeling substrate onto the display substrate.

44. (Amended) The method of manufacturing a matrix type display device according to Claim 38, wherein the potential distribution is formed by successively applying a voltage to the scanning lines, and at the same time applying a voltage to the signal lines, and applying a voltage to the pixel electrodes through the switching elements.

45. (Twice Amended) The method of manufacturing a matrix type display device according to Claim 35, wherein the display device further comprises a light shielding layer; and

wherein the potential distribution is formed by applying a voltage to the light shielding layer.